#16

SEQUENCE LISTING

<110> Yamamoto, Janet K.
Janelle, Jennifer White
Torres, Barbara A.
Arai, Maki
Tanabe, Taishi
Pu, Ruiyu

<120> Materials and Methods for Detecting, Preventing, and Treating Retroviral Infection

<130> UF-267XC1

<140> US 10/080,772
<141> 2002-02-22

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<151> 2001-02-22

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<170> PatentIn version 3.1

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<213> Feline immunodeficiency virus

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<212> DNA
<213> Feline immunodeficiency virus

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<212> DNA
<213> Feline immunodeficiency virus

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<210> 16
<211> 1353

<212> DNA
<213> Feline immunodeficiency virus

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<210> 17
<211> 1353
<212> DNA
<213> Feline immunodeficiency virus

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<210> 18
<211> 1353
<212> DNA
<213> Feline immunodeficiency virus

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<211> 1353
<212> DNA
<213> Feline immunodeficiency virus

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<212> DNA
<213> Feline immunodeficiency virus

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<210> 21
<211> 1353
<212> DNA
<213> Feline immunodeficiency virus

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<210> 22
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<212> PRT
<213> Feline immunodeficiency virus

<400> 22

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Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
        35                  40                  45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
    50                  55                  60

Cys Asp Leu His Asp Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65                  70                  75                  80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
                85                  90                  95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
            100                 105                 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Ser Gly Gly Lys Glu
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Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
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Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145                 150                 155                 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
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Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
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Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
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Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
                245                 250                 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala
            260                 265                 270

Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr
        275                 280                 285

Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
    290                 295                 300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
305                 310                 315                 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
                325                 330                 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
            340                 345                 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
        355                 360                 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
    370                 375                 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
385                 390                 395                 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
                405                 410                 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
            420                 425                 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
        435                 440                 445

Asp Leu
    450
```

<210> 23
<211> 450
<212> PRT

<213> Feline immunodeficiency virus

<400> 23

```
Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Ala Ala Val Lys Arg Cys
1               5                  10                  15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
            20                  25                  30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
        35                  40                  45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
    50                  55                  60

Cys Asp Leu His Asn Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65                  70                  75                  80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
                85                  90                  95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
            100                 105                 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Ser Gly Gly Lys Glu
        115                 120                 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
    130                 135                 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145                 150                 155                 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
                165                 170                 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
            180                 185                 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
        195                 200                 205

Gln Ile Thr Ala Asp Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
    210                 215                 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
225                 230                 235                 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
                245                 250                 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Arg Leu Ala Ala Ile Lys Ala
            260                 265                 270
```

```
Lys Pro Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr
        275                 280                 285

Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
    290                 295                 300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
305                 310                 315                 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
                325                 330                 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
            340                 345                 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
        355                 360                 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
    370                 375                 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
385                 390                 395                 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Pro
                405                 410                 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
            420                 425                 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
        435                 440                 445

Asp Leu
    450

<210>  24
<211>  450
<212>  PRT
<213>  Feline immunodeficiency virus

<400>  24
Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Ala Ala Val Lys Arg Cys
1               5                   10                  15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
            20                  25                  30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
        35                  40                  45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Leu Ile Ile
    50                  55                  60
```

```
Cys Asp Leu His Asp Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65                  70                  75                  80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
                85                  90                  95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
            100                 105                 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Ser Gly Gly Lys Glu
        115                 120                 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
    130                 135                 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145                 150                 155                 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
                165                 170                 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
            180                 185                 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
        195                 200                 205

Gln Ile Thr Ala Asp Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
    210                 215                 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
225                 230                 235                 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
                245                 250                 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Arg Leu Ala Ala Ile Lys Ala
            260                 265                 270

Lys Pro Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr
        275                 280                 285

Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
    290                 295                 300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
305                 310                 315                 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
                325                 330                 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
            340                 345                 350
```

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
355 360 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
370 375 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
385 390 395 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
405 410 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
420 425 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
435 440 445

Asp Leu
450

<210> 25
<211> 449
<212> PRT
<213> Feline immunodeficiency virus

<400> 25
Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
1 5 10 15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
20 25 30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
35 40 45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
50 55 60

Cys Asp Leu His Asn Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65 70 75 80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
85 90 95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
100 105 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Ser Gly Gly Lys Glu
115 120 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
130 135 140

```
Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145                 150                 155                 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
                165                 170                 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
            180                 185                 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
        195                 200                 205

Gln Ile Thr Ala Asp Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
    210                 215                 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
225                 230                 235                 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
                245                 250                 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Arg Leu Ala Ala Ile Lys Ala
            260                 265                 270

Lys Pro Pro Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr Ser
        275                 280                 285

Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn Thr
    290                 295                 300

Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn Ala
305                 310                 315                 320

Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser Thr
                325                 330                 335

Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly Tyr
            340                 345                 350

Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val Gln
        355                 360                 365

Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly His
    370                 375                 380

Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly Lys
385                 390                 395                 400

Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr Pro
                405                 410                 415

Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val Gln
            420                 425                 430
```

```
Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu Asp
        435                 440                 445

Leu

<210>  26
<211>  450
<212>  PRT
<213>  Feline immunodeficiency virus

<400>  26
Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Ile Lys Arg Cys
1               5                   10                  15

Ser Asn Val Ala Val Gly Val Glu Ser Lys Ser Arg Lys Phe Glu Lys
            20                  25                  30

Glu Asn Phe Arg Trp Ala Ile Lys Met Ala Asn Val Thr Thr Gly Arg
        35                  40                  45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
    50                  55                  60

Cys Asp Leu His Asp Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65                  70                  75                  80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
                85                  90                  95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
            100                 105                 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Ser Gly Gly Lys Glu
        115                 120                 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
    130                 135                 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145                 150                 155                 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
                165                 170                 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
            180                 185                 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
        195                 200                 205

Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
    210                 215                 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
225                 230                 235                 240
```

```
Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
                245                 250                 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala
            260                 265                 270

Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr
        275                 280                 285

Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
    290                 295                 300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
305                 310                 315                 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
                325                 330                 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
            340                 345                 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
        355                 360                 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
    370                 375                 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
385                 390                 395                 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
                405                 410                 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
            420                 425                 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
        435                 440                 445

Asp Leu
    450
```

<210> 27
<211> 450
<212> PRT
<213> Feline immunodeficiency virus

<400> 27

```
Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
1               5                   10                  15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
            20                  25                  30
```

```
Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
        35                  40                  45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
    50                  55                  60

Cys Asp Leu His Asp Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65                  70                  75                  80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Val Leu
                85                  90                  95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
            100                 105                 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Ser Gly Gly Lys Glu
        115                 120                 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
    130                 135                 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145                 150                 155                 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
                165                 170                 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
            180                 185                 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
        195                 200                 205

Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
    210                 215                 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
225                 230                 235                 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
                245                 250                 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala
            260                 265                 270

Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr
        275                 280                 285

Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
    290                 295                 300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
305                 310                 315                 320
```

```
Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
                325                 330                 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
            340                 345                 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
        355                 360                 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
    370                 375                 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
385                 390                 395                 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
                405                 410                 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
            420                 425                 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
        435                 440                 445

Asp Leu
    450
```

<210> 28
<211> 450
<212> PRT
<213> Feline immunodeficiency virus

<400> 28

```
Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
1               5                   10                  15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
            20                  25                  30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
        35                  40                  45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
    50                  55                  60

Cys Asp Leu His Asp Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65                  70                  75                  80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
                85                  90                  95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
            100                 105                 110
```

```
Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Ser Gly Gly Lys Glu
        115                 120                 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
    130                 135                 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145                 150                 155                 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
                165                 170                 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
            180                 185                 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
        195                 200                 205

Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
    210                 215                 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
225                 230                 235                 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
                245                 250                 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala
            260                 265                 270

Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asn Tyr
        275                 280                 285

Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
    290                 295                 300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
305                 310                 315                 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
                325                 330                 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
            340                 345                 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
        355                 360                 365

Gln Thr Arg Gly Ser Arg Ser Thr Cys Phe Asn Cys Lys Lys Pro Gly
    370                 375                 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
385                 390                 395                 400
```

```
Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
                405                 410                 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
            420                 425                 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
        435                 440                 445

Asp Leu
    450
```

<210> 29
<211> 450
<212> PRT
<213> Feline immunodeficiency virus

<400> 29

```
Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
1               5                   10                  15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
            20                  25                  30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
        35                  40                  45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
    50                  55                  60

Cys Asp Leu His Asp Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65                  70                  75                  80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
                85                  90                  95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
            100                 105                 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Ser Gly Gly Lys Glu
        115                 120                 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
    130                 135                 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145                 150                 155                 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
                165                 170                 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
            180                 185                 190
```

```
Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
        195                 200                 205

Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
    210                 215                 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
225                 230                 235                 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
                245                 250                 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala
            260                 265                 270

Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr
        275                 280                 285

Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
    290                 295                 300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
305                 310                 315                 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
                325                 330                 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
            340                 345                 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
        355                 360                 365

Gln Thr Arg Gly Ser Arg Pro Met Cys Phe Asn Cys Lys Lys Pro Gly
    370                 375                 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
385                 390                 395                 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
                405                 410                 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
            420                 425                 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
        435                 440                 445

Asp Leu
    450
```

<210> 30
<211> 450
<212> PRT

<213> Feline immunodeficiency virus

<400> 30

```
Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
1               5                  10                  15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
            20                  25                  30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
        35                  40                  45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
    50                  55                  60

Cys Asp Leu His Asp Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65                  70                  75                  80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
                85                  90                  95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
            100                 105                 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Ser Gly Gly Lys Glu
        115                 120                 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
    130                 135                 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145                 150                 155                 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
                165                 170                 175

Phe Ser Thr Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
            180                 185                 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
        195                 200                 205

Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
    210                 215                 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
225                 230                 235                 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
                245                 250                 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala
            260                 265                 270
```

```
Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr
        275                 280                 285

Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
    290                 295                 300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
305                 310                 315                 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
                325                 330                 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
            340                 345                 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
        355                 360                 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
    370                 375                 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
385                 390                 395                 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
                405                 410                 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
            420                 425                 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
        435                 440                 445

Asp Leu
    450
```

<210> 31
<211> 450
<212> PRT
<213> Feline immunodeficiency virus

```
<400> 31
Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
1               5                   10                  15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
            20                  25                  30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
        35                  40                  45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
    50                  55                  60
```

```
Cys Asp Leu His Asp Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65                  70                  75                  80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
                85                  90                  95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
            100                 105                 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Ser Gly Gly Lys Glu
        115                 120                 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
    130                 135                 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145                 150                 155                 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
                165                 170                 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
            180                 185                 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
        195                 200                 205

Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
    210                 215                 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
225                 230                 235                 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
                245                 250                 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala
            260                 265                 270

Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr
        275                 280                 285

Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
    290                 295                 300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
305                 310                 315                 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
                325                 330                 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
            340                 345                 350
```

```
Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
        355                 360                 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
    370                 375                 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
385                 390                 395                 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
                405                 410                 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
            420                 425                 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
        435                 440                 445

Asp Leu
    450
```

<210> 32
<211> 450
<212> PRT
<213> Feline immunodeficiency virus

<400> 32

```
Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
1               5                   10                  15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
            20                  25                  30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
        35                  40                  45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
    50                  55                  60

Cys Asp Leu His Gly Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65                  70                  75                  80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
                85                  90                  95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
            100                 105                 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Gly Gly Gly Lys Glu
        115                 120                 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
    130                 135                 140
```

```
Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145                 150                 155                 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
                165                 170                 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
            180                 185                 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
        195                 200                 205

Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
    210                 215                 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
225                 230                 235                 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
                245                 250                 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala
            260                 265                 270

Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr
        275                 280                 285

Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
    290                 295                 300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
305                 310                 315                 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
                325                 330                 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
            340                 345                 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
        355                 360                 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
    370                 375                 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
385                 390                 395                 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
                405                 410                 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
            420                 425                 430
```

```
Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
        435                 440                 445

Asp Leu
    450

<210>  33
<211>  450
<212>  PRT
<213>  Feline immunodeficiency virus

<400>  33
Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
1               5                   10                  15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
            20                  25                  30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
        35                  40                  45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
    50                  55                  60

Cys Asp Leu His Gly Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65                  70                  75                  80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Val Val Ala Gly Ile Leu
                85                  90                  95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
            100                 105                 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Gly Gly Gly Lys Glu
        115                 120                 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
    130                 135                 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145                 150                 155                 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
                165                 170                 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
            180                 185                 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
        195                 200                 205

Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
    210                 215                 220
```

```
Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
225                 230                 235                 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
                245                 250                 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala
            260                 265                 270

Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr
        275                 280                 285

Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
    290                 295                 300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
305                 310                 315                 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
                325                 330                 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
            340                 345                 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
        355                 360                 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
    370                 375                 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
385                 390                 395                 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
                405                 410                 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
            420                 425                 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
        435                 440                 445

Asp Leu
    450
```

<210> 34
<211> 450
<212> PRT
<213> Feline immunodeficiency virus

<400> 34

```
Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
1               5                   10                  15
```

```
Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
            20                  25                  30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
        35                  40                  45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
    50                  55                  60

Cys Asp Leu His Gly Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65                  70                  75                  80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
                85                  90                  95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
            100                 105                 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Gly Gly Gly Lys Glu
        115                 120                 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
    130                 135                 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145                 150                 155                 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
                165                 170                 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
            180                 185                 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
        195                 200                 205

Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
    210                 215                 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
225                 230                 235                 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
                245                 250                 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala
            260                 265                 270

Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr
        275                 280                 285

Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
    290                 295                 300
```

```
Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
305                 310                 315                 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
                325                 330                 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
            340                 345                 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
        355                 360                 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
    370                 375                 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
385                 390                 395                 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
                405                 410                 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
            420                 425                 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Gly Arg Lys Leu Leu
        435                 440                 445

Asp Leu
    450
```

<210> 35
<211> 450
<212> PRT
<213> Feline immunodeficiency virus

<400> 35

```
Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
1               5                   10                  15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
            20                  25                  30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
        35                  40                  45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
    50                  55                  60

Cys Asp Leu His Gly Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65                  70                  75                  80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
                85                  90                  95
```

```
Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
            100                 105                 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Gly Gly Gly Lys Glu
        115                 120                 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
    130                 135                 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145                 150                 155                 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
                165                 170                 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
            180                 185                 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
        195                 200                 205

Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
    210                 215                 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
225                 230                 235                 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
                245                 250                 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala
            260                 265                 270

Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr
        275                 280                 285

Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
    290                 295                 300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
305                 310                 315                 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
                325                 330                 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
            340                 345                 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
        355                 360                 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
    370                 375                 380
```

```
His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
385                 390                 395                 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
                405                 410                 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
            420                 425                 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Gly Asp Arg Lys Leu Leu
        435                 440                 445

Asp Leu
    450
```

<210> 36
<211> 450
<212> PRT
<213> Feline immunodeficiency virus

<400> 36

```
Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
1               5                   10                  15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
            20                  25                  30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
        35                  40                  45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
    50                  55                  60

Cys Asp Leu His Gly Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65                  70                  75                  80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
                85                  90                  95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
            100                 105                 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Gly Gly Gly Lys Glu
        115                 120                 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
    130                 135                 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145                 150                 155                 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
                165                 170                 175
```

```
Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
            180                 185                 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
        195                 200                 205

Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
    210                 215                 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
225                 230                 235                 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Arg Cys
                245                 250                 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala
            260                 265                 270

Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr
        275                 280                 285

Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
    290                 295                 300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
305                 310                 315                 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
                325                 330                 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
            340                 345                 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
        355                 360                 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
    370                 375                 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
385                 390                 395                 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
                405                 410                 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
            420                 425                 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
        435                 440                 445

Asp Leu
    450
```

<210> 37
<211> 450
<212> PRT
<213> Feline immunodeficiency virus

<400> 37

```
Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
1               5                  10                  15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
            20                  25                  30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
        35                  40                  45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
    50                  55                  60

Cys Asp Leu His Gly Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65                  70                  75                  80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
                85                  90                  95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
            100                 105                 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Gly Gly Gly Lys Glu
        115                 120                 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
    130                 135                 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145                 150                 155                 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
                165                 170                 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
            180                 185                 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
        195                 200                 205

Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
    210                 215                 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
225                 230                 235                 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
                245                 250                 255
```

```
Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala
            260                 265                 270

Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr
        275                 280                 285

Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
    290                 295                 300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
305                 310                 315                 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
                325                 330                 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
            340                 345                 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
        355                 360                 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
    370                 375                 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
385                 390                 395                 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
                405                 410                 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
            420                 425                 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
        435                 440                 445

Asp Leu
    450
```

<210> 38
<211> 450
<212> PRT
<213> Feline immunodeficiency virus

```
<400> 38
Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
1               5                   10                  15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
            20                  25                  30

Gly Asp Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
        35                  40                  45
```

```
Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
    50                  55                  60

Cys Asp Leu His Gly Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65                  70                  75                  80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
                85                  90                  95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
            100                 105                 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Gly Gly Gly Lys Glu
        115                 120                 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
    130                 135                 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145                 150                 155                 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
                165                 170                 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
            180                 185                 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
        195                 200                 205

Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
    210                 215                 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
225                 230                 235                 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
                245                 250                 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala
            260                 265                 270

Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr
        275                 280                 285

Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
    290                 295                 300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
305                 310                 315                 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
                325                 330                 335
```

```
Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
            340                 345                 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
        355                 360                 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
    370                 375                 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
385                 390                 395                 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
                405                 410                 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
            420                 425                 430

Gln Gln Met Ala Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
        435                 440                 445

Asp Leu
    450
```

<210> 39
<211> 450
<212> PRT
<213> Feline immunodeficiency virus

<400> 39

```
Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
1               5                   10                  15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
            20                  25                  30

Gly Asp Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
        35                  40                  45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
    50                  55                  60

Cys Asp Leu His Gly Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65                  70                  75                  80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
                85                  90                  95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
            100                 105                 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Gly Gly Gly Lys Glu
        115                 120                 125
```

```
Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
    130                 135                 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145                 150                 155                 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
                165                 170                 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
            180                 185                 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
        195                 200                 205

Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
    210                 215                 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
225                 230                 235                 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
                245                 250                 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala
            260                 265                 270

Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr
        275                 280                 285

Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
    290                 295                 300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
305                 310                 315                 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
                325                 330                 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
            340                 345                 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
        355                 360                 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
    370                 375                 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
385                 390                 395                 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
                405                 410                 415
```

```
Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
            420                 425                 430

Gln Gln Met Ala Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
        435                 440                 445

Asp Leu
    450
```

<210> 40
<211> 450
<212> PRT
<213> Feline immunodeficiency virus

<400> 40

```
Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
1               5                   10                  15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
            20                  25                  30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
        35                  40                  45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
    50                  55                  60

Cys Asp Leu His Gly Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65                  70                  75                  80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
                85                  90                  95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
            100                 105                 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Gly Gly Gly Lys Glu
        115                 120                 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
    130                 135                 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145                 150                 155                 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
                165                 170                 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
            180                 185                 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
        195                 200                 205
```

```
Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
    210                 215                 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
225                 230                 235                 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
                245                 250                 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala
            260                 265                 270

Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr
        275                 280                 285

Ser Ser Phe Thr Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
    290                 295                 300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
305                 310                 315                 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
                325                 330                 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
            340                 345                 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
        355                 360                 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
    370                 375                 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
385                 390                 395                 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
                405                 410                 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
            420                 425                 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
        435                 440                 445

Asp Leu
    450
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<210> 41
<211> 1353
<212> DNA
<213> Feline immunodeficiency virus

<400> 41
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atggctaatg taactacagg acgagaacct ggtgatatac cagagaattt agaacagtta 180
agatcgatta tttgtgattt acatggcaga agagaacaat atggatctag taaagaaatt 240
gatatggcaa ttaccacttt aaaagttttt gcagtagctg gaattttaaa tatgactgtg 300
tctactgccg cagcagctga acacatgtat gctcagatgg gattagatac cagaccatct 360
ataaaagaag gtgggggaaa agaagaagga cctccacagg cttatcctat tcaaacagta 420
aatggagcac cacagtatgt agcccttgac ccaaaaatgg tgtccatctt tatggaaaaa 480
gcaagagagg ggctaggagg tgaggaggtc caactgtggt tcacagcctt ttctgctaat 540
ttaacttcaa ctgatatggc tacattaatt atgtctgcgc ctggctgtgc agcagataaa 600
gagatcttag atgaaacact gaaacagatg acagctgagt atgatcgtac tcatcctcct 660
gatgggccta gaccgctgcc ctatttcacc gctgcggaga ttatgggaat aggattaact 720
caagaacaac aagcggagcc cagatttgca ccagctagaa tgcagtgtag agcatggtat 780
cttgaagcac taggaaagtt ggcagccata aaagctaaat ctccccgagc agtgcaattg 840
aagcaaggag ctaaagagga ttattcctca tttatagata gattatttgc tcaaatagat 900
caagagcaga acacagctga agtaaagctg tatttaaaac aatctttgag catagccaat 960
gctaacccag attgtaaaag ggcaatgagt catcttaaac cagagagtac tttagaggaa 1020
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gctcttacaa gggttcagac agttcaaaca agaggatcta gaccaacgtg tttcaattgt 1140
aaaaaaccag gccacctggc caaacaatgt agagaagcaa agagatgtaa caactgtgga 1200
aaacctggtc acttagctgc taattgctgg caaagaggta aaaaaacccc gggaaacggg 1260
aagatggggc cagctgcagc cccggtaaac caagtgcagc aaatggtgcc atctgcacct 1320
ccaatggaag acaggaaatt gttagattta taa 1353

<210> 42
<211> 1353
<212> DNA
<213> Feline immunodeficiency virus

<400> 42
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gtaggggtag ggagtaagag tagaaagttt ggagaaggaa actttaggtg ggccataagg 120
atggctaatg taactacagg acgagaacct ggtgatatac cagagaattt agaacagtta 180
agatcgatta tttgtgattt acatgacaga agagaacaat atggatctag taaagaaatt 240
gatatggcaa ttaccacttt aaaagttttt gcagtagctg gaattttaaa tatgactgtg 300
tctactgccg cagcagctga acacatgtat gctcagatgg gattagatac cagaccatct 360
ataaaagaaa gtgggggaaa agaagaagga cctccacagg cttatcctat tcaaacagta 420
aatggagcac cacagtatgt agcccttgac ccaaaaatgg tgtccatttt tatggaaaaa 480
gcaagagagg ggctaggagg tgaggaggtc caactgtggt tcacagcctt ttctgctaat 540
ttaacttcaa ctgatatggc tacattaatt atgtctgcgc ctggctgtgc agcagataaa 600
gagatcttag atgaaacact gaaacagatg acagctgagt atgatcgtac tcatcctcct 660
gatgggccta gaccgctgcc ctatttcacc gctgcggaga ttatgggaat aggattaact 720
caagaacaac aggcggagcc cagatttgca ccagctagaa tgcagtgtag agcatggtat 780
cttgaagcac taggaaagtt ggcagccata aaagctaaat ctccccgagc agtgcaatta 840
aagcaaggag ctaaagagga ttattcctca tttatagata gattatttgc tcaaatagat 900
caagagcaga acacagctga agtaaagctg tatttaaaac aatctttgag catagccaat 960
gctaacccag attgtaaaag ggcaatgagt catcttaaac cagagagtac tttagaggaa 1020
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gctcttacaa gggttcagac agttcaaaca agaggatcta gaccaacgtg tttcaattgt 1140
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aaacctggtc acttagctgc taattgctgg caaagaggta aaaaaacccc gggaaacggg 1260
aagatggggc cagctgcagc cccggtaaac caagtgcagc aaatggtgcc atctgcacct 1320
ccaatggaag acaggaaatt gttagattta taa 1353

<210> 43
<211> 1353

<212> DNA
<213> Feline immunodeficiency virus

<400> 43
atggggaatg gacaggggcg agattggaaa atggccatta agagatgtag taatgttgct 60
gtaggagtag gggggaagag taaaaaattt ggagaaggga atttcagatg ggccattaga 120
atggctaatg tatctacagg acgagaacct ggtgatatac cagagacttt agatcaacta 180
aggttggtta tttgcgattt acaagaaaga agagaaaaat ttggatctag caaagaaatt 240
gatatggcaa ttgtgacatt aaaagtcttt gcggtagcag gacttttaaa tatgacggtg 300
tctactgctg ctgcagctga aaatatgtat tctcaaatgg gattagacac taggccatct 360
atgaaagaag caggtggaaa agaggaaggc cctccacagg catatcctat tcaaacagta 420
aatggagtac cacaatatgt agcacttgac ccaaaaatgg tgtccatttt tatggaaaag 480
gcaagagaag gactaggagg tgaggaagtt caactatggt ttactgcctt ctctgcaaat 540
ttaacaccta ctgacatggc cacattaata atggccgcac cagggtgcgc tgcagataaa 600
gaaatattgg atgaaagctt aaagcaactg acagcagaat atgatcgcac acatccccct 660
gatgctccca gaccattacc ctattttact gcagcagaaa ttatgggtat aggattaact 720
caagaacaac aagcagaagc aagatttgca ccagctagga tgcagtgtag agcatggtat 780
ctcgaggcat taggaaaatt ggctgccata aaagctaagt ctcctcgagc tgtgcagtta 840
agacaaggag ctaaggaaga ttattcatcc tttatagaca gattgtttgc ccaaatagat 900
caagaacaaa atacagctga agttaagtta tatttaaaac agtcattgag catagctaat 960
gctaatgcag actgtaaaaa ggcaatgagc caccttaagc cagaaagtac cctagaagaa 1020
aagttgagag cttgtcaaga aataggctca ccaggatata aaatgcaact cttggcagaa 1080
gctcttacaa aagttcaagt agtgcaatca aaaggatctg gaccagtgtg ttttaattgt 1140
aaaaaaccag gacatctagc aagacaatgt agagaagtga aaaaatgtaa taaatgtgga 1200
aaacctggtc atgtagctgc caattgttgg caaggaaata gaaagaattc gggaaactgg 1260
aaggcggggc gagctgcagc cccagtgaat caaatgcagc aagcagtaat gccatctgca 1320
cctccaatgg aggagaaact attggattta taa 1353

<210> 44
<211> 1353
<212> DNA
<213> Feline immunodeficiency virus

<400> 44
atggggaatg gacaggggcg agattggaaa atggccatta agagatgcag taatgttgct 60
gtaggagtag gggggaagag taaaaaattt ggagaaggga atttcagatg ggccatcaga 120
atggctaatg tatctacagg acgagaacct ggtgatatac cagagacttt agatcaactg 180
aggttggtta tttgcgattt acaagaaaga agagaaaaat ttggatctag caaagaaatt 240
gatatggcaa ttaccacctt aaaagttttt gcagtagtgg gacttttaaa tatgacagtg 300
tctactgctg ctgcagctga aaatatgtat actcagatgg gattagacac tagaccatct 360
acaaaggaag ctggaggaaa agaggaaggc cctccacagg catatcctat tcaaacagta 420
aatggagcac cacaatatgt agctcttgac ccaaaaatgg tgtctatttt catggaaaag 480
gcaagagaag ggttaggagg tgaagaagtt caactatggt tcacagcctt ctctgcaaat 540
ttaacaccta ctgacatggc cacattaata atggccgcac cagggtgcgc tgcagataaa 600
gaaatattgg atgaaagctt aaagcaaata acagcagaat atgatcgtac acatccccct 660
gatggtccta gaccattacc atattttact gcggcagaga ttatgggtat aggattaact 720
caagaacaac aagcagaagc aagatttgca ccagctagga tgcagtgtag agcatggtat 780
cttgaggcat taggaaaatt ggccgccata aaagctaagt ctcctcgagc tgtacagtta 840
agacaaggag ctaaagaaga ttattcatcc tttatagaca gattgtttgc ccaaatagat 900
caagaacaaa atacagctga agttaagata tatctaaaac agtcattaag catggctaat 960
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aagttgagag cctgtcaaga gataggatcc ccaggatata aaatgcaact cttggcagaa 1080
gctcttacaa aagttcaagt agtgcaatca aaaggatcag gaccagtgtg ttttaattgt 1140
aaaaaaccgg ggcatctagc aagacagtgt agagatgtga aaaaatgtaa taaatgtgga 1200
agacctggtc atttagctgc cagatgctgg cagggtggta aaaagaactc gggaaactgg 1260

aaggcggggc gagctgcagc cccagtaaac caagtgcagc aggcagtaat gccatctgca 1320
cctccaatgg aggagagact attggattta taa 1353

<210> 45
<211> 1200
<212> DNA
<213> Feline immunodeficiency virus

<400> 45
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gtaggagtag gggggaagag taaaaaattt ggagagggga attttaggtg ggccataaga 120
atggctaatg tatctacagg acgagaacct ggtgatatac cagagacttt agatcaatta 180
aggttggtta tttgcgattt acaagaaaga agagaaaaat ttggatctag caaagaaatt 240
gacatggcaa ttacaacatt aaaagtcttt gcagtagtgg gacttttaaa tatgacagtg 300
tctactgctg ctgcagctga aaatatgtat actcagatgg gattagacac tagaccgtct 360
acaaaagaag cgggaggaaa agaggaaggc cctccacagg catatcctat tcaaacagta 420
aatggagcac cacaatatgt agcacttgac ccaaaaatgg tgtccatttt tatggaaaag 480
gcaagagagg gattaggagg tgaggaagtt caactatggt ttacagcctt ctctgcaaat 540
ttaacaccta ctgacatggc cacattaata atggccgcac ccgggtgcgc tgcagataaa 600
gaaatattgg atgaaagctt aaagcaattg acagcagaat atgatcggac aaatccccct 660
gatggtccta gaccattacc ctattttact gcagcagaaa ttatgggtat aggattaact 720
caagaacaac aagcagaagc aagatttgca ccagctagga tgcaatgtag agcatggtat 780
cttgaggcat taggaaaatt agccgccata aaggctaaat ctcctcgagc tgtgcagtta 840
agacaaggag ctaaggaaga ttattcatcc tttatagaca gattgtttgc ccaaatagat 900
caagaacaaa atacagctga agttaagtta tatctaaaac agtcattaag catagctaat 960
gctaatgcag aatgcaaaaa ggcaatgagt catcttaagc cagaaagtac cctagaagaa 1020
aagttgagag cttgtcaaga gataggatcc ccaggatata aaatgcaact cttggcagaa 1080
gctcttacaa aagttcaagt agtgcaatca aaaggatcag gaccagtgtg ttttaattgt 1140
aaaaaaccag ggcatctagc aagacagtgt agagatgtga aaaaatgtaa taaatgtgga 1200

<210> 46
<211> 795
<212> DNA
<213> Feline immunodeficiency virus

<400> 46
tctacattaa aagtctttgc agtagcagga attttaaata tgacagtgtc tactgctgct 60
gcagctgaaa acatgtataa tcaaatggga ttagacacta gaccgtctac aagagaagca 120
ggaggaaaag aggaaggccc tccacaggca tatcctattc aaacagtaaa tggagcacct 180
caatatgtag cacttgaccc aaaaatggtg tccattttta tggaaaaagc aagagaagga 240
ttaggaggtg aggaagttca actatggttt actgccttct ctgcaaattt aacacctact 300
gacatggcca cattaataat ggccgcacca gggtgtgctg cagataaaga aatattagat 360
gaaagcttaa agcaattgac agcagaatat gatcgtacac atccccctga tgctcctaga 420
ccattaccct attttactgc agcagaaatt atgggtatag gattaactca agaacaacaa 480
gcagaagcaa gatttgcacc agctaggatg cagtgtagag catggtatct tgaggcatta 540
ggaaaattgg ccgccataaa agctaagtct cctcgagctg tgcagttaag acatggagct 600
aaggaggatt attcatcctt tatagacaga ttgtttgccc aaatagatca agaacaaaat 660
acagctgaag ttaaattata tttaaaacag tcattaagca tagctaatgc taatgcagaa 720
tgtaaaaaag caatgagtca ccttaagcca gaaagtaccc tagaagaaaa gttgagagct 780
tgtcaagaag tagga 795

<210> 47
<211> 1353
<212> DNA

<213> Feline immunodeficiency virus

<220>
<221> misc_feature
<222> (612)..(612)
<223> n = a, c, g, or t.

<400> 47
atggggaatg gtcaggggcg tgattggaaa atggccatta aaagatgtag taatgttgct 60
gtaggagtag gggggaggag taaaaaattt ggagaaggaa atttcagatg ggccattaga 120
atggctaacg tatctacagg acgagaacct ggtgatatac cagagacttt agatcaacta 180
aggttggtta tttgcgaatt acaagaaaga agagaaaaat ttggatctag caaagaattg 240
gacatggcaa ttactacatt aaaagtcttc gcggtagtag gacttttaaa tatgacagtg 300
tctactgctg ctgcagctga aaacatgtat actcagatgg gattagacac caggccatct 360
acaagagaag caggaggaaa agaggaaagc cctccacagg catatcctat tcaaacagta 420
aatggagcac cacaatatgt agcacttgac ccaaaaatgg tgtccatttt tatggaaaag 480
gcaagagaag gactaggagg tgaggaagtt caattatggt ttactgcctt ctctgcaaat 540
ttaacaccta ctgacatggc cacattaata atggccgcac cagggtgcgc tgcagataaa 600
gaaatattgg angaaagctt aaagcaattg acagcagaat atgatcgtac acatcccccc 660
gatggtccca gaccattacc ctattttact gcagcagaaa ttatgggcat aggattaact 720
caagaacaac aagcagaagc aagatttgca ccagctagga tgcagtgtag agcatggtat 780
cttgaggcat taggaaaact ggccgccata aaggctaaat ctcctcgagc tgtgcagtta 840
agacaaggag ctaaagaaga ttattcatcc tttatagaca gattgtttgc ccaaatagat 900
caagaacaaa atacagctga agttaagtta tatttaaaac agtcattaag cattgctaat 960
gctaatgcag aatgtaaaaa ggcaatgagc caccttaagc cagaaagtac cctagaagaa 1020
aagttgagag cttgtcaaga agtaggctca ccaggatata aaatgcaact cttggcagag 1080
gctcttacaa aagttcaagt agtacaatca aaaggatcag gaccagtgtg ttttaattgt 1140
aaaaaaccag gacatctagc aagacagtgt agagatgtga aaaaatgtaa taaatgtgga 1200
aagcctggtc atttagctgc caaatgttgg caaggtggta aaaagaattc gggaaacggg 1260
aaggcggggc gagctgcagc cccagtgaat caagtgcagc aagcagtaat accatctgca 1320
ccttcaatag aggagaaact attggattta taa 1353

<210> 48
<211> 795
<212> DNA
<213> Feline immunodeficiency virus

<400> 48
gttactttaa aagtttttgc agtggcagga attctaaata tgactgtatc tactgccaca 60
gcagctgaaa atatgtatgc tcagatggga ttagacacca gaccatctat aaaagaaagt 120
gggggaaaag aagaaggacc tccacaggct tatcctattc aaacagtaaa tggagcacca 180
cagtatgtag cccttgatcc aaaaatggtg tccattttta tggagagagc aagagagggg 240
ctaggaggtg aggaggtcca actgtggttc acagcctttt cagctaattt aacatcaact 300
gatatggcta cattaattat gtccgcacct ggctgtgcag cagttaaaga aattctagat 360
gaaacactga aacagatgac agctgagtat gatcgtaccc atcctcctga tgggcctaga 420
ccgctgccct atttcactgc cgcagagatt atggggatag gattaactca agaacaacaa 480
gcagagccca ggtttgcacc agccagaatg cagtgtagag catggtacct tgaagcatta 540
ggaaagttgg cggccataaa agccaaatct ccccgagcag tacaattgaa gcagggagct 600
aaagaggact attcctcatt catagataga ctatttgctc aaatagatca agagcagaac 660
acagctgaag taaagctgta tttaaaacaa tctttaagta tagccaatgc taatccagat 720
tgtaaaagag caatgagtca tcttaaacca gaaagtactt tagaggaaaa actgagggcc 780
tgccaagaag tagga 795

<210> 49
<211> 795

<212> DNA
<213> Feline immunodeficiency virus

<400> 49
accactttaa aagtttttgc agtggcagga attctaaata tgactgtatc tactgccaca 60
gcagctgaaa atatgtatgc tcagatggga ttagacacca gaccatctat aaaagaaagt 120
gggggaaaag aagaaggacc tccacaggct tatcctattc aaacagtaaa tggagcacca 180
cagtatgtag cccttgatcc aaaaatggtg tccattttta tggagaaggc aagagagggg 240
ctaggaggtg aggaggtcca actgtggttc acagcctttt cagctaattt aacatcaact 300
gatatggcta cattaattat gtccgcacct ggctgtgcag cagataaaga aatcctagat 360
gaagcactga aacagatgac agctgagtat gatcgtaccc atcctcctga tgggcctaga 420
ccgctgccct atttcactgc cgcagagatt atggggatag gattaactca agaaccacaa 480
gcagagccca ggtttgcacc agccagaatg cagtgtagag catggtacct tgaagcatta 540
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aaagaggact attcctcatt catagataga ctatttgctc aaatagatca agagcagaac 660
acagctgaag taaagctgta tttaaaacac tctttaagta tagctaatgc taatccagat 720
tgtaaaagag caatgagaca tcttaaacca gaaagtactt tagaggaaaa actgagggcc 780
tgccaagaag tagga 795

<210> 50
<211> 795
<212> DNA
<213> Feline immunodeficiency virus

<400> 50
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gcagctgaaa atatgtatgc tcagatggga ttagacacca gaccatctat aaaagaaagt 120
gggggaaaag aggaaggacc tccacaggct tatcctattc aaacagtaaa tggagcacca 180
cagtatgtag cccttgatcc aaaaatggtg tccattttta tggagaaggc aagagagggg 240
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gatatggcta cattaattat gtccgcacct ggctgtgcag cagataaagg aatactagat 360
gaaacgctga aacagatgac agctgagtat gatcgtaccc atcctcctga tgggcctaga 420
ccgctgccct atttcactgc cgcagagatt atggggatag gattaactca agaacaacaa 480
gcagagccca ggtttgcacc agccagaatg cagtgtagag catggtacct tgaagcatta 540
ggaaagttgg cggccataaa agccaaatct ccccgagcag tacaattgaa gcagggagct 600
aaggaggact attcctcatt tatagataga ctatttgctc aaatagatca agagcagaac 660
acaactgaag taaagctgta tttaaaacaa tctttaagta tagccaatgc taatccagat 720
tgtaaaagag caatgagtca tcttaaacca gaaagtactt tagaggaaaa actgagggcc 780
tgccaagaag tagga 795

<210> 51
<211> 1350
<212> DNA
<213> Feline immunodeficiency virus

<400> 51
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gtaggagtag ggagtaagag taaaagatct ggagaaggaa actttagatg ggccataagg 120
atggctaatg taactacagg acgagaacca ggtgatatac cagagacttt agaacagtta 180
agatcaatta tttgtgattt acaaggcaga agagaacact atggatctag taaggaaatt 240
gatatggcaa ttaccacttt aaaagttttt gcagtggcag gaattctaaa tatgactgta 300
tctactgcca cagcagctga aaatatgtat gctcagatgg gattagacac cagaccatct 360
gtaaaagaaa gtgggggaaa agaagaagga cctccacagg cttatcctat tcaaacagta 420
aatggagcac cacagtatgt agcccttgat ccaaaaatgg tgtccatttt tatggagaag 480
gcaagagagg ggctaggagg tgaggaggtc caactgtggt tcacagcctt ttcagctaat 540

ttaacatcaa ctgatatggc tacattaatt atgtccgcac ctggctgtgc agcagataaa 600
gaaatcctag atgaaacact gaaacagatg acagctgagt atgatcgtac ccatcctcct 660
gatgggccta gaccgctgcc ctatttcact gccgcagaga ttatggggat aggattaact 720
caagaacaac aagcagagcc caggtttgca ccagccagaa tgcagtgtag agcatggtac 780
cttgaagcat taggaaagtt ggcggccata aaagccaaat ctccccgagc agtacaattg 840
aagcagggag ctaaagagga ctattcctca tttatagata gactatttgc tcaaatagat 900
caagagcaga acacagctga agtaaagctg tatttaaaac aatctttaag tatagccaat 960
gctaatccag attgtaaaag agcaatgagt catcttaaac cagaaagtac tttagaggaa 1020
aaactgaggg cctgccaaga agtaggatca ccaggatata aaatgcaatt gctggcggaa 1080
gctctcacaa gggttcaaac agttcaaaca aaaggaccaa ggctagtgtg tttcaattgt 1140
aaaaaaccag gccacctggc tagacaatgt aaagaagcga agagatgtaa taactgtgga 1200
aaacctggtc acttagctgc taattgctgg caaggaggta ggaaaacctc gggaaacgag 1260
aaggtggggc gagctgcagc cccagtaaac caagtgcagc aaatagtacc atctgcacct 1320
ccaatggagg agaaactatt agatttataa 1350

<210> 52
<211> 795
<212> DNA
<213> Feline immunodeficiency virus

<400> 52
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gcagctgaaa atatgtatgc tcagatggga ttagacacca gaccatctat aaaagaaagt 120
gggggaaaag aagaaggacc accacaggct tatcctattc aaacagtaaa tggagcacca 180
cagtatgtag cccttgatcc aaaaatggtg tccattttta tggagaaggc aagagagggg 240
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gatatggcca cattaatcat gtccgcacct ggctgtgcag cagataaaga aatactagat 360
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aaagaggact attcctcatt tatagataga ctattcgctc aaatagatca agagcagaac 660
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naccananna ngtagcnctn ganccnaaaa tggtgtcnan tttnatggan aangcaagag 180
anggnntagg aggngangan gtncaggnga ngangtncan ntntggttna cngcnttntc 240
ngcnaatnta acnncnactg anatggcnac attaatnatg ncngcnccng gntgngcngc 300
agntaangan atnntngang aa 322

<210> 56
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<213> Feline immunodeficiency virus

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accacaatat gtagcacttg acccaaaaat ggtgtccatt tttatggaaa aggcaagaga 180
aggactagga ggtgaggaag ttcaggtgag gaagttcaac tatggtttac tgccttctct 240
gcaaatttaa cacctactga catggccaca ttaataatgg ccgcaccagg gtgcgctgca 300
gataaagaaa tattggatga a 321

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accacaatat gtagcacttg acccaaaaat ggtgtccatt tttatggaaa aggcaagaga 180
aggactagga ggtgaggaag ttcaggtgag gaagttcaat tatggtttac tgccttctct 240
gcaaatttaa cacctactga catggccaca ttaataatgg ccgcaccagg gtgcgctgca 300
gataaagaaa tattgganga a 321

<210> 58
<211> 321
<212> DNA
<213> Feline immunodeficiency virus

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accacaatat gtagcacttg acccaaaaat ggtgtccatt tttatggaaa aggcaagaga 180
aggattagga ggtgaggaag ttcaggtgag gaagttcagc tatggtttac tgccttctct 240
gcaaatttaa cacctactga catggccaca ttaataatgg ccgcaccagg gtgcgctgca 300
gataaagaaa tattggatga a 321

<210> 59
<211> 321
<212> DNA
<213> Feline immunodeficiency virus

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accacaatat gtagctcttg acccaaaaat ggtgtctatt ttcatggaaa aggcaagaga 180
agggttagga ggtgaagaag ttcaggtgaa gaagttcaac tatggttcac agccttctct 240
gcaaatttaa cacctactga catggccaca ttaataatgg ccgcaccagg gtgcgctgca 300
gataaagaaa tattggatga a 321

<210> 60
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accacaatat gtagccctgg atcctaaaat ggtgtccatt tttatggaaa aagcaagaga 180
aggattagga ggagaggagg tccaggagag gaggtccaac tatggtttac tgcatttca 240
gctaatctaa catcaactga tatggctaca ttaatcatgt ctgcaccagg ttgtgcagca 300
gataaggaga tcttagatga a 321

<210> 61
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accacagtat gtagcccttg atccaaaaat ggtgtccatt tttatggaga aggcaagaga 180
ggggctagga ggtgaggagg tccaggtgag gaggtccaac tgtggttcac agccttttca 240
gctaatttaa catcaactga tatggctaca ttaattatgt ccgcacctgg ctgtgcagca 300
gttaaagaaa ttctagatga a 321

<210> 62
<211> 321
<212> DNA

<213> Feline immunodeficiency virus

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accacagtat gtagcccttg atccaaaaat ggtgtccatt tttatggaga aggcaagaga 180
ggggctagga ggtgaggagg tccaggtgag gaggtccaac tgtggttcac agccttttca 240
gctaatttaa catcaactga tatggctaca ttaattatgt ccgcacctgg ctgtgcagca 300
gataaagaaa tcctagatga a 321

<210> 63
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<213> Artificial Sequence

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<400> 63
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<210> 64
<211> 31
<212> DNA
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<220>
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<210> 65
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<212> DNA
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<210> 66
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<213> Feline immunodeficiency virus

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ggggctagga ggtgaggagg tccaggtgag gaggtccaac tgtggttcac agccttttct 240

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gataaagaga tcttagatga a 321

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<211> 76
<212> DNA
<213> Feline immunodeficiency virus

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tgacccaaaa atggtg 76

<210> 68
<211> 80
<212> DNA
<213> Feline immunodeficiency virus

<400> 68
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gacccaaaaa tggtgtccaa 80